northern health
the northern way of caring

Public Health Protection, Public Health Engineering
4th floor - 1600 Third Avenue, Prince George, BC V2L 3G6
T: (250) 565-2150, F: (250) 565-2144, PHE@northernhealth.ca

Application for Waterworks Construction Permit

Water System:		Date:	
Project Name:			
Physical Address:			
Mailing Address:	☐ as above		
Owner/Operator:		City:	
Telephone(s):		E-mail:	
Designer:	☐ as above	City:	
Telephone(s):		E-mail:	

Submitted by:		Signature:	
Representing:		☐ Owner , ☐ Operator , ☐ Designer	☐ legal agent for Owner
Address:	☐ as above		
Telephone(s):		E-mail:	

Does the water system have an existing ***Operating Permit*** under the *Drinking Water Protection Act* ?	☐ Yes ☐ No
Is the water system currently on a *Boil Water Notice* or *Water Quality Advisory*?	☐ Yes ☐ No
Is the water system operated only part of the year (seasonal operations eg, camps, resorts)?	☐ Yes ☐ No
Is the system classified as a *small water system* (max. 500 users within any 24 h period)?	☐ Yes ☐ No
Is this application for the purposes of a *subdivision* under the *Local Services Act*?	☐ Yes ☐ No
Will the Water System operate as a *Water Utility*?	☐ Yes ☐ No
Are all proposed works located on public right-of-ways or registered easements?	☐ Yes ☐ No
Does the proposal involve any strata lots or buildings?	☐ Yes ☐ No
Are plans and drawings signed, sealed, and dated by a Professional Engineer?	☐ Yes ☐ No

Components Being Modified:

(check ☑ all that apply) ☐ New System ☐ Source ☐ Treatment ☐ Storage ☐ Distribution

Sections to be completed below: **All** Parts | Part **A** | Parts **A & B** | Part **C** | Part **D**

Describe Proposed Works * :

* For watermains, list length of each size, class, type – eg, *85m of 150mm C900 DR18 PVC* – include # hydrants, # valves

Part **A:** New or Modified Raw Water **Source**

Source

☐ sampling tap for raw water quality

☐ ***Groundwater Source***

☐ well construction: ☐drilled ☐dug ☐driven ☐other ☐not sure

☐ well pit: ☐drained ☐sump pump

☐ flowing (artesian) well

☐ well pump: ☐submersible ☐hand ☐turbine ☐other ☐none

☐ aquifer type: ☐sand/gravel ☐bedrock ☐not sure

☐ aquifer protection: ☐confined ☐unconfined ☐not sure

attached documents:

- ☐ driller's well log
- ☐ hydrogeologist's report
- ☐ GUDI/GARP screening

☐ ***Surface Water Source***

☐ MoE *Water Licence*

☐ lake

☐ stream

☐ spring

☐ DFO approved intake

☐ low-lift pump

☐ ***Hauled Water Source***

☐ attach lab report on chemical, physical, and bacteriological raw untreated, source water quality

☐ water quality concerns [☐iron ☐manganese ☐arsenic ☐uranium ☐sulphur ☐hardness ☐turbidity ☐colour ☐UVT ☐coliforms ☐cysts ☐viruses ☐DBPs other (specify) _____]

☐ odour: ☐none ☐slight ☐strong (Describe: _____)

☐ taste: ☐none ☐sweet ☐salty ☐bitter ☐metallic ☐other (Describe: _____)

Does raw, untreated, unfiltered source water quality meet 2012 *Canadian Drinking Water Guidelines*:

- for all ***health-based*** parameters?	☐ Yes ☐ No	List any exceedances. _____
- for other ***aesthetic*** parameters?	☐ Yes ☐ No	List any exceedances. _____

Part **B:** New or Modified **Treatment** Works

Treatment

What is the *design flow* for the treatment works? _____ ☐ *gpm* , ☐ *m^3/d* , *specify:* _____

☐ attach supporting calculations for design flow, if available, based on population served, fixture counts, etc.

☐ discharge backwash / reject water to: ☐sanitary sewer ☐storm sewer ☐ground ☐subsurface pit ☐surface water

☐ source water protection plan

☐ bank (subsurface) filtration

☐ coarse pre-filter (_____ µm)

☐ oxidation: ☐aeration ☐Cl_2 ☐$KMnO_4$

☐ coagulant: ☐PACl ☐Alum ☐other ☐flocculation / ☐sedimentation

☐ rapid sand filter (backwashable)

☐ multi-media filter: ☐gravel ☐sand ☐anthracite ☐GAC ☐garnet ☐other ☐greensand, ☐pyrolusite, ☐BIRM

☐ water softener (☐Na ☐K)

☐ anion exchange (target: _____)

☐ activated carbon: ☐granular, ☐block, ☐powdered, ☐other

☐ membrane cartridge filter(s)

____ µm → ____ µm → ____ µm☐(abs)

☐ pressure drop measured

chlorination: ☐ feed pump ☐ batch

☐ ozone disinfection

☐ contact tank volume? ____ ☐*gal* ☐*L*

☐ CT? _____ mg·min/L

☐ membrane filtration: ☐micro ☐ultra ☐nano ☐RO

☐validation: ☐NSF ☐EPA ☐none

☐integrity testing: ☐direct ☐indirect

☐ slow sand filtration

☐ UV disinfection

☐ NSF 55 ☐Class A ☐Class B

☐ UVT value? _____ %

☐ UV dose? _____ mJ/cm²

☐ Point-of- ☐Entry ☐Use # ____

_____

☐ chlorine monitor/log

☐ turbidity monitor/log

☐ sampling taps # _____

☐ qualified operator

☐ other (_____)

Does the treatment comply with **4-3-2-1-0** treatment objectives? ☐ Yes ☐ No ☐ not sure

Part C: New or Modified **Storage** (Raw or Treated Water)

Storage

☐ **Raw Water Storage**	☐ **Treated Water Storage**	☐ **Distribution Storage**
☐ Volume? _____ ☐*gal* ☐*L* ☐*m³*	☐ Volume? _____ ☐*gal* ☐*L* ☐*m³*	☐ Volume? _____ ☐*gal* ☐*L* ☐*m³*
☐ covered ☐ uncovered	☐ pressure tanks(s)	☐ rechlorination stations
☐ above ground ☐ below ground	☐ clear well ☐ cistern(s)	☐ Distance to first user?
☐ pressurized ☐ vented	☐ high lift pump _____ ☐*kW* ☐*hp*	_____ ☐*metres* ☐*feet*

Has provision been made for backflow prevention and a sampling tap at all storage sites?	☐ Yes ☐ No
At average flow conditions, how long will water stored in the tank or reservoir last? _____ ☐*hours* ☐*days*	

Part D: New or Modified **Distribution** System

Distribution

☐ Watermain replacement ☐ Watermain extension ☐ Pumping station ☐ Other (specify) _____

How many **new** lots/units will be serviced?	# strata units	# fee simple units

Does the waterworks produce enough water (quantity) to service existing and future lots?	☐ Yes ☐ No
Will all watermains have 3 metres clear ***horizontal separation*** from sewers and drains? If NO, propose protection measures on plans and submit **Schedule A** below.	☐ Yes ☐ No
At all sewer/drain crossings, and wherever the normal 3 m ***horizontal separation*** is not possible, are the watermains at least 450 mm (18 inches) ***above*** the sanitary or storm sewer? If NO, propose protection measures on plans and submit **Schedule A** below.	☐ Yes ☐ No
Do all service connections meet the above separation guidelines?	☐ Yes ☐ No
Have blow-offs or hydrants been provided for flushing purposes on all dead-ends and low points?	☐ Yes ☐ No
Does the location of valves permit flushing to be carried out effectively?	☐ Yes ☐ No
Have valves, hydrants or services designed to provide air relief been provided at all high points?	☐ Yes ☐ No
Will water for flushing, testing, and disinfection come from a hydrant (testable BFP) or water hauler?	☐ Yes ☐ No
Do you have enough water pressure to achieve a flushing velocity of at least 0.8 m/s (2.5 ft/s)?	☐ Yes ☐ No ☐ ???

Schedule A (Attach a separate page if necessary, and refer to the *Guideline: Sewer - Watermain Conflicts* for more details.)

#	Street Name	Station (0+000)	Horizontal Separation (m)	Vertical Separation [a] (mm)	Proposed Protective Measures
1.					
2.					
3.					

[a] vertical separation = elevation of bottom of sewer – elevation of top of watermain (can be negative)

Will you disinfect the new pipes and equipment before putting them in service following construction activities?

☐ AWWA C651-C654
☐ MMCD Section 02666
☐ no disinfection planned
☐ Other (describe)

_____
_____
_____

Submission Package:

Supporting document checklist:	Enclosed	Previously Submitted	Forth-coming	Not Applicable
Cover Letter (eg, to explain the context of your Application)	☐	☐		
Manufacturer's Technical Specifications (new or altered equipment, specify model, any optional settings, NSF validation, test protocols)	☐	☐	☐	
Design Brief (eg, assumptions and design parameters for major projects)	☐	☐	☐	☐
Plans and Drawings: (11x17 or 8½x11 preferred in pdf electronic format)				
either ***A) Three basic plans*** (i, ii, iii below)				
i. Location Map (regional setting, including communities, lakes, rivers, roads, etc.) → "how to get there from the nearest town"	☐	☐	☐	☐
ii. Site Plan (intake, treatment, storage tanks, watermains, valves, hydrants, clean-outs, sampling locations – include contaminant sources like sanitary sewers, lagoons, tanks, etc. on this plan.)	☐	☐	☐	☐
iii. Schematic Diagram(s) – water flow sequence	☐	☐	☐	☐
or ***B) Engineered plans*** (plan & profile, piping & instrumentation, etc.)	☐	☐	☐	☐
List additional plans, drawings, reports, etc. below:				
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐

Please mail, fax, or e-mail the submission package (or any questions) to:

Att: Regional Public Health Engineer
Northern Health Authority, Public Health Protection
4th Floor - 1600 3rd Avenue, Prince George, BC V2L 3G6
Phone: 250-565-2150 Fax: 250-565-2144 E-mail: PHE@northernhealth.ca

Click to email application.

Please allow 30 to 60 days for normal processing of Waterworks Construction Permit Applications. The works may be inspected by Northern Health during or following construction. You also require a valid *Water System* ***Operating Permit*** before supplying water to users. Operational details should be discussed with your local Drinking Water Officer / Environmental Health Officer.