

# SUPPLY SYSTEM BWA ASSESSMENT TOOL

## GENERAL OVERVIEW:

Community Name: \_\_\_\_\_ Date visited: \_\_\_\_\_

Have there been any recent weather events (high precipitation, overland flooding, snow melt): \_\_\_\_\_

Is water quality (clarity, colour, odour) affected by weather? \_\_\_\_\_

Has there been an increase in turbidity or colour in the water recently? Y / N

Have there been complaints of water taste or odours from residents? Y / N

Service/Existing Population: \_\_\_\_\_

No. of homes on public WW collection system: \_\_\_\_\_ No. of homes on private septic: \_\_\_\_\_

Number of homes on private wells: \_\_\_\_\_ No. of industrial users: \_\_\_\_\_

## Treatment and Disinfection Building

Year of Construction: \_\_\_\_\_ Treatment Processes: \_\_\_\_\_

Type of building construction (metal, wood, brick): \_\_\_\_\_

Condition of treatment building: \_\_\_\_\_

Design capacity: \_\_\_\_\_ Typical Flows: \_\_\_\_\_

Does system meet peak demand? Y / N Are any unsanitary conditions present? Y / N

Describe any obvious maintenance requirements: \_\_\_\_\_

Describe any upgrades completed in last 5 years: \_\_\_\_\_

## Operations

Number of water system operators? \_\_\_\_\_ Are operators certified? Y / N

Circle records that are available:

a) Flows	b) Free and Total chlorine residual
c) Chemical consumption	d) Treatment/disinfection system maintenance
e) Source water monitoring	f) Distribution system maintenance
g) Other(s): _____	

Circle any of the following that are available on site:

a) Standard Operating Procedures      b) Contingency Plans      c) Emergency Response Plans  
d) Maintenance Assurance Manual      e) Source Water/Well Head Protection Plan

List any risks identified through completing the above form:

### General Risks:

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## SOURCE WATER:

### Surface Water Supply (if applicable)

Name of water supply: \_\_\_\_\_

Have there been reports of beavers or muskrats in the water supply? Y / N

Other wildlife or birds? Y / N

Any on-site septic systems near the water source or intake? Y / N

Any new excavations or developments in the water supply area? Y / N

Any farms or livestock in or near the water supply Y / N

Any recent spills (septic or other ) in the water supply area? Y / N

Any algal blooms been observed? Y / N

Has the water level in the source dropped in recent years? Y / N

Have there been any water shortages? Y / N

### Groundwater Supply (if applicable)

Has a hydrogeological assessment been done? Y / N Date of Assessment: \_\_\_\_\_

Has a GUDI assessment been performed for the well? Y / N Date of Assessment: \_\_\_\_\_

Is the sanitary seal intact? Y / N

Are vents protected from debris and rainwater? Y / N

Does casing extend 600 mm above ground? Y / N

Is the wellhead secured to prevent unauthorized access? Y / N

Are there any farms or livestock near by the well? Y / N

Have there been any water shortages? Y / N

What is the distance to nearest known septic field? \_\_\_\_\_

List any risks identified through completing the above form:

### Source Water Risks Identified:

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## DISINFECTION:

Type of disinfection system(s): \_\_\_\_\_ Is disinfection system operational? Y / N  
Are all chemicals ANSI/NSF 60 Certified? Y / N Is dosing system flow paced? Y / N  
Age of disinfectant chemical: \_\_\_\_\_ Concentration of feed solution: \_\_\_\_\_

For the following equipment, select if they are functional, and if regularly calibrated

<u>Equipment</u>	<u>Functional?</u>	<u>Calibrated Regularly?</u>
a) Pocket Colorimeter (chlorine analyzer)	Y / N / NA	Y / N / NA
b) Chlorine Dosing Pump(s)	Y / N / NA	Y / N / NA
c) Flow Meter	Y / N / NA	Y / N / NA
d) Online Chlorine Analyzer	Y / N / NA	Y / N / NA
e) Other: _____	Y / N / NA	Y / N / NA
f) Other: _____	Y / N / NA	Y / N / NA

### Calculating CT - Refer to Water Resources Management Division's SOP for CT Calculation

Peak flowrate through the system (in m<sup>3</sup>/min) \_\_\_\_\_ m<sup>3</sup>/min

Minimum chlorine residual at end of contact chamber/1st customer: \_\_\_\_\_ mg/L

Does the system have a contact pipe or tank? Y / N

If system has contact pipe/tank, select the configuration and associated baffle factor:

<u>Configuration</u>		<u>baffle factor (Fsc)</u>
a) single or multiple unbaffled inlets and outlets	<input type="checkbox"/>	0.3
b) baffled inlet or outlet	<input type="checkbox"/>	0.5
c) perforated inlet baffle, with outlet weir	<input type="checkbox"/>	0.7
d) contact pipe (no baffles)	<input type="checkbox"/>	1

What CT is being achieved? \_\_\_\_\_ mg · min/L Are CT requirements (> 6 mg min/L) met? Y / N

### Chlorine Residual

Range of Cl<sub>2</sub> residual at disinfection building (mg/L): Free: \_\_\_\_\_ Total: \_\_\_\_\_

Range of Cl<sub>2</sub> residual within distribution system (mg/L) Free: \_\_\_\_\_ Total: \_\_\_\_\_

Range of Cl<sub>2</sub> residual at dead ends (mg/L): Free: \_\_\_\_\_ Total: \_\_\_\_\_

List any risks identified through completing the above form:

#### Disinfection Risks Identified:

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## OTHER TREATMENT EQUIPMENT (if applicable):

### General Treatment

Has there been an increase in turbidity or colour in the water recently? Y / N

Have there been complaints of water taste or odours from residents? Y / N

Type of treatment system: \_\_\_\_\_

List chemicals used at the facility: \_\_\_\_\_

Are all chemicals ANSI/NSF 60 Certified? Y / N

Are chemicals stored properly? (e.g. secondary containment, compatibility) Y / N

Have any chemicals surpassed their date of expiry? \_\_\_\_\_

## MECHANICAL AND ELECTRICAL EQUIPMENT

Number of pumps: \_\_\_\_\_

Type of pumps: \_\_\_\_\_

Size of pumps: \_\_\_\_\_

Condition of pumps: \_\_\_\_\_

Other mechanical equipment on site (valves, blowers, compressors): \_\_\_\_\_

Condition: \_\_\_\_\_

Other comments: \_\_\_\_\_

Instrumentation (pressure gauges, flow meters, etc.): \_\_\_\_\_

Condition: \_\_\_\_\_

Other comments: \_\_\_\_\_

List any risks identified through completing the above form:

**Other Treatment Equipment Risks Identified:**

**Mechanical and Electrical Equipment Risks Identified:**

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## DISTRIBUTION SYSTEM:

### Distribution System

Construction material(s) (circle all that apply):	CI / DI / Steel / PVC / HDPE / AC / CPP
Pipe Diameter(s) (circle all that apply):	2" / 4" / 6" / 8" / 10" / 12" / 14" / 16"/
Are drawings available?      Y / N	Are there <b>functioning</b> hydrants:      Y / N
Is flushing performed:      Y / N	Frequency of flushing: _____
Are there records of distribution system pressures?      Y / N	
Typical pressures: _____	
Maximum pressure (pressures at low lying areas): _____	
Minimum pressure (pressures at high elevations): _____	
Have there been recent events causing pressure drop:	a) breaks:      Y / N
	b) flushing:      Y / N
	c) new high demand users:      Y / N
	d) fire fighting:      Y / N
	e) other: _____
Is a detectable free chlorine residual consistently maintained in distribution system?	Y / N
Have there been recent significant changes in water demand?	Y / N

### Cross Connection Control Program

Do any of the following conditions exist and are there backflow preventers (BFPs):

- a) Public water supply users that also have a private well:      Yes, with BFPs / Yes, without BFPs / No
- b) Industrial facilities (such as a fish plant) on public water supply      Yes, with BFPs / Yes, without BFPs / No

Do any customers have backflow preventers?	Y / N
Are backflow preventers inspected annually by specialist?	Y / N
Are there any abandoned wells or surface water sources?	Y / N
Are abandoned sources decommissioned properly?	Y / N

List any risks identified through completing the above form:

### Distribution Risks Identified:

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## TREATED WATER STORAGE:

Type of storage tank: a) Below-ground Reservoir: Y / N

b) Standpipe: Y / N

c) Elevated Tank: Y / N

Capacity: \_\_\_\_\_ igal, USgal, m<sup>3</sup>, L

Construction Material: \_\_\_\_\_

Year Constructed: \_\_\_\_\_

Condition: \_\_\_\_\_

Does storage include pest protection (screens on vents/overflows)? Y / N

Do openings, hatches, and ports have gaskets, as required? Y / N

Is the facility secure from unauthorized access? Y / N

Are security measures in place? Y / N

Is a maintenance plan in place? Y / N

Has prescribed maintenance and inspection been performed? Y / N

Are there signs of cracks or rust? Y / N

What maintenance has been performed in past 12 months? \_\_\_\_\_

Are chlorine residuals measured at the distribution system storage tank? Y / N

List any risks identified through completing the above form:

**Storage Risks Identified:**

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## SAMPLE SITES:

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Are sample taps clean, free of rust and have suitable flow?	Y / N
Are there nearby sources of contamination of the sampling tap?	Y / N
Is the tap regularly used?	Y / N
Are there private treatment systems upstream of any sample taps?	Y / N
Have distribution system repairs been made in area of any sample sites?	Y / N
Have there been low pressure events since last testing?	Y / N

## BACTERIOLOGICAL SAMPLING PROCEDURE

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Does sampling protocol follow Health and Community Services procedure?	Y / N
Were aerators, swivels, and/or remote hoses removed prior to sampling?	Y / N
Were sterile bottles used and adequate storage available at the prescribed temperatures?	Y / N
Were clean gloves used to handle sample bottles and collect samples?	Y / N
Was tap flushed for five minutes before collecting sample?	Y / N

## OTHER:

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Has Department of Health and Community Services indicated that there has been a waterborne illness outbreak?	Y / N
Has the facility been subject to other BWAs in past 12 months?	Y / N
Were the most recent sample results satisfactory?	Y / N
Have additional water sources been added recently?	Y / N
Is there evidence of forced access to:    Disinfection building	Y / N
Pump Station	Y / N
Storage Tanks	Y / N
Other: _____	Y / N
Are there any known leaks in the municipal sewage system?	Y / N
Are any components of the water supply system near on-site septic systems?	Y / N

List any risks identified through completing the above form:

### Other Risks: